

**ABSTRACT OF THE DISCLOSURE**

A hard disk controller generates a read gate signal RG which has a predefined read start time and read end time set based on a sector pulse as a reference. A read data demodulation unit reproduces read data from a readout signal of medium by executing a read based on the read gate signal RG. A read gate optimization unit detects errors of read data demodulated by the data demodulation unit while varying the read start time and the read end time of the read gate signal RG, determines the read start time and the read end time at which the detected errors will be minimized and sets these in the read gate generation unit.